NEW RULES

Adjusting to a Declining Paddlefish Population

By Fred Ryckman

Since North Dakota's first paddlefish snagging season in 1976, much has changed.

This year is no different as fisheries managers are making even more moves to further reduce harvest of a species that has been swimming in state waters for eons.

Because of concerns about a declining paddlefish population, both North Dakota and Montana have imposed a reduction in annual harvest from 1,500 to 1,000 fish.

Paddlefish regulation changes for this season in North Dakota allow for an in-season closure – with a 60-hour notice to sportsmen – if harvest approaches the target level of 1,000 paddlefish; a reduction in legal snagging hours from 8 a.m. to 10 p.m.; and Monday and Tuesday "snag and release only" days.

Because of concerns about a declining paddlefish population, both North Dakota and Montana have imposed a reduction in annual harvest from 1,500 to 1,000 fish.

Since all paddlefish snagged on Mondays and Tuesdays must be returned to the river, it will be illegal to use, or possess, a gaff hook in any of the snagging areas on these days. Snaggers must also have a current and unused paddlefish tag to participate.

Voluntary catch-and-release was considered by fisheries managers, but eventually shelved for fear that some snaggers would "high grade" – keeping a smaller fish and then releasing it when a bigger one was snagged – putting more harvest pressure on the most valuable fish to the population – large females.

Paddlefish are the largest, and perhaps most unique fish species in North Dakota. Their natural range within the state encompasses the Yellowstone River and all of the mainstem Missouri River, where they've been a member of the fish community for millions of years.

Paddlefish numbers in North Dakota fluctuated greatly over time, due to major swings in climate and habitat conditions. Timing and magnitude of river flows and water temperatures during early summer spawning have affected their reproductive success. Since paddlefish can live 40 to 50 years, the population could withstand years of poor reproduction and recruitment as long as years of excellent reproduction and recruitment were mixed in.

Prior to construction of Garrison and Oahe dams, the Missouri River mainstem in North Dakota retained most of its natural flow characteristics. When reservoirs behind these dams filled, spawning habitat under these new pools was eliminated. In addition, regulated discharges of cold water from Garrison Dam eliminated spawning habitat from the dam downstream to Lake Oahe's headwaters.

Fortunately, the Yellowstone River still retains a semblance of its historic flows and function, making the Williston Reach of the Missouri and Yellowstone rivers upstream of Lake Sakakawea the only suitable spawning habitat for paddlefish in North Dakota.

The Yellowstone River-Sakakawea

Fred Ryckman

Biologists have studied North Dakota and Montana's paddlefish extensively over the past decade. From an estimated 100,000 fish in the early 1970s, today's population is around 34,000.

stock of paddlefish inhabits Lake Sakakawea and the Williston Reach in North Dakota, the Missouri River below Ft. Peck Dam in Montana, and the Yellowstone River in North Dakota and Montana. This stock is jointly managed by Montana and North Dakota.

Management calls for an orderly and sustainable recreational harvest; cooperative interstate management and research; protection and improvement of habitat quality in the rivers and reservoirs; defining the role of artificial propagation; and increasing public awareness.

Montana and North Dakota fisheries personnel have joined to implement and address various aspects of this plan. In addition, Dr. Dennis Scarnecchia, a fisheries professor from the University of Idaho, conducts paddlefish research for both states.

Scarnecchia's analysis of Montana jaw-tagging and recapture data indicates a population of more than 100,000 adult paddlefish in the early 1970s. High productivity and the new reservoir phenomena, teamed with some good years of reproduction and recruitment during the 1960s, likely created high paddlefish numbers in the '70s, perhaps the highest population ever.

More recent data from both states indicates paddlefish numbers have steadily declined over the years and now stand at only about 34,000 fish. Declines in the 1980s were likely caused by changing reservoir conditions, poorer spawning success and recruitment, and an increase in snagging interest by North Dakota and Montana anglers. Regardless of the exact causes of decline, recruitment to the adult population did not replace fish mortality.

While some paddlefish die of old age, most adult mortality is attributable to snagging. North Dakota has had a snagging season since 1976; Montana has had one since the early 1960s. Each state now has an annual season with similar, but not identical, regulations. An annual harvest cap of 3,000 paddlefish between the two states was imposed in 1995. From '95 through 2001, the average annual harvest was 2,565 fish.

Each state has enforced in-season closures in recent years to prevent harvest beyond the caps.

Both states agree the number of adult paddlefish should not be allowed to drop below its current level, and have adopted several regulatory changes over the years to stabilize the population.

In 2002, North Dakota reduced the snagging season from 46 to 31 days; banned nighttime snagging; and closed about eight miles of Missouri River previously open to snagging.

Despite these changes, the Game and Fish Department closed the 2002 snagging season after just 19 days to keep from exceeding the harvest cap. Unusually low river levels, which made paddlefish more vulnerable to snagging, played a major role in high harvest.

Reducing mortality of adult fish is part of the solution to stabilizing adult paddlefish numbers. Better reproduction and stronger recruitment of young fish is also needed.

An assessment of paddlefish reproduction in upper Sakakawea from 1993-2000 showed good to excellent reproduction in most years. More importantly, this work indicated good survival of the 1995, 1996 and 1997 year-classes.

And not by coincidence, paddlefish survival increased in these years because of above-average flows in the Yellowstone River and high water levels in Sakakawea. High river flows provided conditions for excellent reproduction, while high lake levels were favorable for growth and survival of young.

In the first few years paddlefish snagging was allowed in North Dakota, seasons ran from early May to mid-November, with daily and possession limits of two fish. Season lengths and limits became more restrictive prior to the early 1990s. The last "liberal" snagging season was 1991, when the 58-day season ran from May 4 through July 1, and daily and possession limit was still one fish.

In 1992, a limit of two fish was established, and snaggers had to obtain tags to be placed on harvested fish. This tagging requirement continues today, but the limit in four of the last 10 years has dropped to just one fish per snagger.

It's clear that habitat protection and enhancement is critical in the paddlefish plan. Because of the importance of periodic high Yellowstone River flows, more needs to be done to protect against further depletions and diversions. And while high Sakakawea water levels are important to these fish, more attention to managing water in the Missouri River basin is needed.

North Dakota is committed to maintaining a paddlefish snagging season. With continued attention to the needs of this species, it will remain a member of the state's fish community for eons to come.

***FRED RYCKMAN** is a Game and Fish Department district fisheries biologist in Williston.*

North Dakota is committed to maintaining a paddlefish snagging season. With continued attention to the needs of this species, it will remain a member of the state's fish community for eons to come.